

In the Claims

Claim 1 (Withdrawn): Method of lengthy product surface treatment comprising lengthy product direct transporting through device for product surface treatment, in which there is liquid of higher level than input an output passages of the device, liquid flowing out through said passages being prevented, wherein

- device for surface treatment comprises tank with liquid connected by intake passage with camera for product surface treatment with input and output passages,
- for supplying the liquid through the intake passage, when liquid level is higher than input and output passages of the camera, pressure discharge in the camera for product surface treatment is created or pressure discharge in the camera for product surface treatment and excessive pressure in the tank are created at the same time,
- for preventing liquid flowing out the camera the following condition is maintained:

$$P_{at} \geq P_1 + P_{m.col}, \text{ where}$$

P_{at} — atmospheric pressure,

P_1 — pressure in the camera for applying the coating,

$P_{m.col}$ — pressure of the melt column above the lower side of the passage.

Claim 2 (Withdrawn): Method according to the claim 1 wherein pressure differential

$$\Delta = P_{at} - (P_1 + P_{m.col})$$

is maintained on the constant level in the camera for applying the coating.

Claim 3 (Withdrawn): Method according to the claim 1 wherein one of the following materials is used as treating liquid: metal or alloy melt, melt or solution of organic or inorganic substances or their mixes.

Claim 4 (Withdrawn): Method according to the claim 1 wherein one of the following products is used as treated product: wire, bar, rolled product, band (ribbon), tube, filament, yarn, rope.

Claim 5 (Withdrawn): Method according to the claim 1 wherein surface treatment is applying the coating on the product surface; to accomplish it, lengthy product is transported directly through device for applying the coating, In which there is coating metal melt, the melt level is higher than input and output passages of the device; flowing out of liquid through said passages is prevented; device for surface treatment comprises tank with melt connected by intake passage with camera for product surface treatment with input and output passages made in walls of said camera, excessive pressure in the tank and pressure discharge in the camera for applying the coating being created to supply the melt through the intake passage into the camera so, that the melt level is higher than input and output passages of the camera, and the following condition is maintained for preventing liquid flowing out the camera:

$$P_{at} \geq P_1 + P_{m.col}, \quad \text{where}$$

P_{at} – atmospheric pressure,

P_1 – pressure in the camera for applying the coating,

$P_{m.col}$ – pressure of the melt column above the lower side of the passage.

Claim 6 (Withdrawn): Method according to the claim 5 wherein pressure differential

$$\Delta = P_{at} - (P_1 + P_{m.col})$$

is maintained on the constant level while applying the coating.

Claim 7 (Withdrawn): Method according to the claim 5 wherein melt of aluminum, or zinc, or their alloys, or tin, or lead is used as coating material.

Claim 8 (Withdrawn): Method according to the claim 5 wherein one of the following products is used as lengthy product: wire, bar, rolled product, band (ribbon) or tube.

Claims 9-20 (Cancelled).

Claim 21 (Previously presented): A device for applying a coating on a lengthy product by plunging the product into a melt of the coating comprising:
a tank with the melt; and
a camera for applying the coating melt, the camera being above the tank and having
opposite input and output passages through which the product passes;
wherein the camera is provided in its lower part with an intake vertical passage plunged
into the tank;
the camera and the tank being provided with pressure control means for creating pressure
discharge and excessive pressure respectively in the camera and the tank;

whereby the pressure in the tank is maintained greater than the pressure in the camera
such that melt will move from the tank upwardly through the vertical passage to
the camera.

Claim 22 (Previously presented): A device according to claim 21 wherein the lengthy
product is one of the following products: wire, bar, steel band, steel rolled product or tube.

Claim 23 (Previously presented): A device according to claim 21 wherein the camera
and the tank are provided with melt heating means.

Claim 24 (Previously presented): A device according to claim 21 wherein the following
condition is maintained in the camera:

$$P_{at} \geq P_1 + P_{m.col}, \quad \text{where}$$

P_{at} — atmospheric pressure,

P_1 — pressure in the camera for applying the coating,

$P_{m.col}$ — pressure of the melt column above the lower side of the passage.

Claim 25 (Previously presented): A device according to claim 21 wherein the
camera is provided with level control means for controlling the level of the melt in the
camera.

Claim 26 (Previously presented): A device according to claim 21 wherein the input
and output passages are located in side walls of the camera.

Claim 27 (Previously presented): A device according to claim 21 wherein the pressure control means includes an outlet in an upper portion of the camera above the melt level of the camera to release pressure from the camera and an inlet in the tank above the melt level of the tank to increase pressure in the tank.

Claim 28 (Cancelled).

Claim 29 (Previously presented): A device for coating a lengthy product, comprising:
a tank with melted coating material;
a camera above the tank;
a passage extending between the tank and the camera for supplying coating material from the tank into the camera;
the camera having a product inlet and a product outlet both being below the level of coating material in the camera such that product moving through the inlet and outlet is coated with the melted coating material; and
the camera having a pressure less than atmospheric pressure to prevent leakage of melted coating material through the inlet and outlet.

Claim 30 (Previously presented): The device of claim 29 wherein the camera is at a lower pressure than the tank to cause melted coating material to flow upwardly through the passage from the tank to the camera.

Claim 31 (Previously presented): The device according to claim 29 wherein the lengthy product is one of the following: wire, bar, steel band, steel rolled product or tube.

Claim 32 (Previously presented): The device according to claim 29 wherein the camera and the tank are provided with means for maintaining the coating material in a melted state.

Claim 33 (Previously presented): The device according to claim 29 wherein the camera is provided with means for controlling the level of coating material in the camera.

Claim 34 (Previously presented): The device according to claim 29 wherein the input and output passages are located in side walls of the camera.

Claim 35 (Previously presented): The device according to claim 29 further comprising pressure control means including an outlet in an upper portion of the camera above the melt level of the camera to release pressure from the camera and an inlet in the tank above the melt level of the tank to increase pressure in the tank.